Interview with Santiago Lyon
Content Authenticity Initiative

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KENNEALLY: More and more, people trust information less and less. This is true wherever news comes from. Traditional journalism organizations and digital-native social media networks alike face a formidable challenge – breaking through the cloud of misinformation and overcoming doubt and suspicion.

Welcome to Copyright Clearance Center's podcast series. I'm Christopher Kenneally for Velocity of Content.

In 2019, Adobe, with its partners Twitter and *The New York Times*, announced the Content Authenticity Initiative to provide consumers with more information about the content they're seeing and to help them become more discerning about media. The CAI now collaborates with hundreds of representatives from software, publishing, and social media companies, human rights organizations, photojournalism, and academic researchers to develop content attribution standards and tools. In June, *The Wall Street Journal* became the latest member of the CAI community.

Santiago Lyon is head of advocacy and education for the Adobe-led Content Authenticity Initiative. As a photographer for Reuters and the Associated Press, Santiago Lyon won multiple photojournalism awards for his coverage of conflicts around the world. In 2003, he was a Nieman Fellow in Journalism at Harvard University before becoming director of photography at the Associated Press, a position he held until 2016. Under his direction, the AP won three Pulitzer Prizes for photography as well as multiple other major photojournalism awards around the world. Welcome to the program, Santiago Lyon.

LYON: Hi. Thanks for having me. Good to be here.

KENNEALLY: Well, we're looking forward to this discussion and learning more about the Content Authenticity Initiative. It offers a technological solution to what you've called information's provenance problem. Photography is the place you're starting, especially because we recognize it's so easy to manipulate images, but you are more ambitious than just photography. Tell us about the provenance problem. How did we get here? How big is the problem? And why does it matter?

LYON: It's becoming an increasingly confusing digital media landscape out there, and consumers often have difficulty understanding where content comes from, whether it's

been manipulated – if it has, to what degree? Traditionally, the approach to these problems has been in the area of detection, which is to say uploading suspect digital files to programs that look for telltale signs of manipulation, whether that's sloppy Photoshopping or inconsistent pixel structures or an impossible combination of lighting sources.

While detection software is useful, we believe that it has a couple of fundamental problems. Number one, at least in its current form, it's not scalable, in the sense that it takes too long to run images and other file types through detection software. And secondly, it's invariably an interminable arms race, with bad actors trying to stay one step ahead of the latest detection software.

So instead of trying to detect what's false, we decided to look at it from the other end of the argument, which is proving what's real. To that end, we began the work on the Content Authenticity Initiative and working to establish the provenance of digital file types – that is to say the basic trustworthy facts about the origins of a piece of digital content, what might have happened to it along its journey from creation or capture to publishing, and then exposing some or all of that information to the consumer to give them some insight into that provenance to help them make better-informed decisions about the veracity of what they're looking at.

KENNEALLY: So you're taking this challenge of confronting misinformation and disinformation from the front end. Tell us how you're going to achieve that. Who are the partners? And explain a little bit more about how the technology works.

LYON: First of all, it's important to note that this is an open source initiative, so this is Adobe leading a large community of media, technology, and other partners to establish the industry standard around provenance. So on the news media side, we have such august members as the Associated Press and Reuters and AFP and Getty Images. And on the consumer-facing news end of things, we have partners like *The New York Times* obviously as a founding member, but *The Washington Post*, *The Wall Street Journal*, the BBC, etc.

What's happening is we're working together with camera manufacturers and smartphone manufacturers to incorporate this technology into their devices at production, which is to say in a couple of years, when you buy a hardware capture device, it will come out of the box with this CAI technology installed in it, which you as the user can then choose to activate if you're interested in your content having more provenance data around it to bolster it, to ensure its veracity.

After the capture aspect of things, we're then working to get this technology installed into editing software – Adobe products to be sure, but also non-Adobe products, given the open source nature of this. How that works is that when somebody is using an editing program,

regardless of which one, any changes that they make to a piece of content – let's say they crop or tone, lighten, darken a photograph, for example – each of those changes will be captured and secured as an additional layer of metadata that will be embedded with the image file.

And then lastly, we're working with publishers to maintain those metadata fields and expose some or all of them to the consumer so that the consumer can get some insight into the facts behind the provenance of a piece of digital content.

KENNEALLY: Whether or not those metadata fields are there will be kind of a signal, won't it? And it will say whether the photographer or the creator of that particular piece of media really wants their reputation to be clear to their audiences.

LYON: Exactly. What we strive for is ubiquity, in the sense that over time, this will become the industry standard, and consumers will expect to see some provenance data associated with images or video or audio or other digital file types. And by having some visibility into the provenance of those file types, they will be able to better understand what it is they're looking at, where it came from, who published it, and what might have been done to it.

KENNEALLY: A skeptic might ask, Santiago Lyon, who put you in charge of telling people what's right and what's wrong when it comes to information? Is that what this is about?

LYON: No, we're building a tool. Adobe is a technology company. We're not forcing our vision of anything onto anybody. We're providing a tool that publishers and others can use to determine how much information they want to share about the provenance of the content that they're publishing. Really, what it does is bolster and buttress existing trust models. For example, if you happen to trust the Associated Press or *The New York Times* or *The Wall Street Journal* or Fox News or whatever it might be, this additional information, together with that existing trust model, will serve to establish the veracity and the integrity of the content that you're looking at.

KENNEALLY: And the Content Authenticity Initiative will start with photography, with images, but you're not only concerned with protecting those. What role do you envision for CAI in other types of media?

LYON: We have a lot of interest in this technology from a wide range of industry and technology sectors, and we believe that over the coming years, the notion of provenance will likely become foundational for a great many things digital. As we do more and more things online, whether that's more sophisticated e-commerce or experiences in the metaverse or in the NFT world or in travel or in VR and AR environments, we believe that there will be an expectation that there will be more provenance data available in order to

make all of those experiences safer for news consumers and for general consumers – users of things digital.

KENNEALLY: Is it possible that you'll even move beyond many of those traditional media formats into NFTs, for example?

LYON: Yes, we're already doing some work in the NFT space. Currently in Photoshop, it is possible to create an NFT, and we've made it so that the creator can link that NFT to their crypto wallet, and by extension, link it to a number of the major NFT marketplaces and establish a level of provenance around NFTs that up until now has currently not existed. In other words, if you buy an NFT today, you don't really have any guarantees as to who created it other than the guarantees that the marketplace or perhaps somebody purporting to be the artist can give you. By using this technology, you're able to establish a much more robust provenance chain back to the original creator of the NFT.

In addition, there's a lot of activity in the space of computer-generated media – that is to say synthetic media generated by computers – whether it's for entertainment purposes or business purposes. And we're in touch with a lot of those companies, because most of them want their synthetic media content to be labeled responsibly. Because over time, it will become almost impossible for the casual viewer to distinguish between what's been generated by a human creator and what's been generated by a machine or an algorithm.

KENNEALLY: You became involved in the Content Authenticity Initiative, Santiago Lyon, after a distinguished, some might say a heroic, career as a war photographer, working in regions such as Central America, the Middle East, and ex-Yugoslavia. How did that background – how did your experience as a photographer shape your decision to join this initiative?

LYON: Well, I saw this opportunity as a logical extension of my life's work. In other words, my almost 40 years in photography and photojournalism have been dependent to a large degree on my belief in journalism as a fundamental pillar of democracy, my belief in truth, my belief in authenticity. So when I had the opportunity to begin working on the Content Authenticity Initiative, it seemed like a very natural fit to me. It seemed like a logical extension of my life's work. So I'm delighted to be able to contribute to the area of authenticity and provenance from this, for me, new technological standpoint.

KENNEALLY: Tell us about the plans you have at the CAI to promote media literacy in schools. Can education correct for misinformation?

LYON: We think that – or I think that education is a fundamental part of the fight against mis- and disinformation. And when we talk about education, broadly speaking, I'm talking

about two different aspects of education. One is classroom education. And to that end, we're busy creating curricular materials for both middle schoolers, high schoolers, and university students. That material will be focused on best practices in media literacy and will of course make mention of the area of provenance as it relates to the work that we're doing.

The other area of education eventually will become consumer or reader education, viewer education, that we believe we can do together with media companies and social media platforms, which is to say educate the users of this technology as to what they're looking at, how it works, what it means. Together with provenance, and to some degree detection and fact checking, and to some degree policy, we believe all of those things form part of a larger jigsaw puzzle that will help us eliminate the scourge of mis- and disinformation that we see in our digital lives every day.

KENNEALLY: When you became a photographer in the 1980s, Santiago, you shot with film, and you worked in darkrooms. Certainly, digital technology has transformed media entirely, from creation to distribution. Are you concerned about where the future may be taking us? Should all of us be concerned about our digital futures?

LYON: I think we should all be concerned about the provenance of what it is we're reading. I think we should be very careful to always check the source. Who is reporting this? Who is saying this? What might their agenda be? What relationship might they have with a particular aspect of a news story or things of that nature? I think it behooves us to be discerning consumers of content. And I think that the technology that we are developing will help us do that.

I'm optimistic for the future. Technology has played a major role in storytelling since its inception and will likely continue to. And the fact that it's getting more sophisticated and more complicated, while it does create some challenges, also creates some significant opportunities in terms of engaging more effectively and efficiently with viewers who might be suffering from digital fatigue or story overload or things of that nature. So I'm very optimistic and excited about the future.

KENNEALLY: Santiago Lyon, head of advocacy and education for the Adobe-led Content Authenticity Initiative, thank you for speaking with me today.

LYON: Thank you. My pleasure.

KENNEALLY: That's all for now. Our producer is Jeremy Brieske of Burst Marketing. You can subscribe to this program wherever you go for podcasts and follow us on Twitter and

on Facebook. I'm Christopher Kenneally. Thanks for joining me for this Velocity of Content podcast from CCC.

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